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A Model to Develop the English Proficiency of Engineering Students at Rajamangala University of Technology Krungthep, Bangkok, Thailand

Leechai Panyawong-Ngam^{a*}, Nipont Tangthong^a, Pramote Anunvrapong^a

^a*Rajamangala University of Technology Krungthep, Bangkok, Thailand*

Abstract

This cooperative research study was conducted by an English language instructor and several Engineering instructors. The purpose of the study was to survey the needs of entrepreneurs using English for communication, develop a model of English instruction to meet their demands, and assess the levels of English proficiency, achievement and satisfaction among engineering students regarding this model of English instruction. The population of this study was 25 MOU entrepreneurs and 70 third year Engineering students from the Electronics and Telecommunications Department. The purposive sampling technique was employed to select the participants, 20 entrepreneurs and 36 Engineering students from Rajamangala University of Technology, Krungthep. The entrepreneurs were interviewed and their responses analyzed to identify the English communication needs in their workplaces. The students took the Test of English for International Competency (TOEIC) to assess their general English proficiency. All of the data were analyzed through descriptive statistics. The results revealed that the skill in highest demand for entrepreneurs was listening, followed by writing and reading skills. The students had a total average score of 237.22, based on TOEIC scores. This demonstrates that their level of English proficiency was low. A model of English instruction for engineering students was developed through a combination of the communicative approach and content-based teaching methodologies, implemented in the second semester of the 2013 academic year. The students were given an achievement test, a satisfaction questionnaire, and a TOEIC test. On average, their achievement and satisfaction levels were at a high level, but their average second TOEIC test score was only 211.83.

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*Leechai Panyawong-Ngam Tel: +764993773

E-mail: lpanya@yahoo.com

1. Main Text

In a dynamic world, economic challenges are a constant. As Thailand is an ASEAN member, foreign countries may wish to invest the country. In modern Thai society, foreign businesses and international trade are common. Many international firms in Thailand require new graduates with a high level of English proficiency and many Thai companies also require staff with high levels of English proficiency, i.e. Suvarnabhumi Power Services Co., Ltd (SPS): A Plus Ambassador: minimum TOEIC 550; Hoya Optics (Thailand) Ltd., minimum TOEIC 400; PTT Phenol: Electrical Engineer & Mechanical Engineering, TOEIC 500; Siam Toyota Manufacturing Co., Ltd.: minimum TOEIC 550 etc. (<http://th.jobsdb.com>)

Most graduates face the problem of using English in communication, particularly engineering students. P. Kanchana (2000) found that the English proficiency of Thai graduates was below the international standard required for further study abroad or at the graduate level (a TOEFL score of at least 550 was required). The average score of the equated CU-TEP results of graduates from the Sciences was 450, while those from Social Sciences and the Humanities were 444, and students who wished to enroll in international programs at Chulalongkorn University needed a score of at least 489. The average TOEFL scores of graduates from Singapore and the Philippines were over 550, while graduates from Malaysia, Indonesia, Burma, Vietnam and Cambodia scored over 500. Graduates from Thailand and Laos who wanted to further their studies abroad had average TOEFL scores of below 500. Thai graduates who want to further their studies both in Thailand and abroad urgently need to develop their English knowledge and improve their skills in order to catch up with their peers from neighboring ASEAN countries and with the world community in general, in order to share knowledge and exchange information.

It could also be claimed that the English proficiency level of Thai students appears to be lower than those of students in other countries, and particularly in neighboring countries. These students wish to study English at a higher level as their English proficiency level affects their ability to meet the English language requirements for many jobs, as well as their ability to deliver a satisfactory job performance in terms of their language skills. This could also lead to a higher rate of unemployment in Thailand.

We can't deny that English language communication becomes a major role of developing professional students for the world market. Rajamangala University of Technology Krungthep is one of the major universities in Thailand and has provided engineering graduates who have been well accepted for many years. However, the English language Proficiency of them seems to be very low. Hence, it is necessary for the researcher to find a way and the means to develop our students or graduates in a better manner and respond to the international labor market.

Research objectives:

1. To survey the needs of entrepreneurs in utilizing English for communication in practice.
2. To study the English proficiency of engineering students.
3. To develop an English instruction model.
4. To find out the English achievement of engineering students.
5. To discover engineering students' satisfaction regarding the instruction model.

2. Methodology

The Department of Electronics and Telecommunications, the Faculty of Engineering selected 20 entrepreneurs working in conjunction with the MOU to study for this project. Interview techniques were employed to gather the required data and from these entrepreneurs. The 20 structured interview questions were developed in accordance with the objectives of the study, as well as the demands of entrepreneurs. The third year students from the Electronics and Telecommunication departments were selected via purposive sampling. The TOEIC test was used to test the proficiency of the students on March 4, 2012. After that, the development of the English instruction model was applied via a communicative approach and content based teaching to implement in classroom teaching-learning in October, 2012. Then the experimental class was implemented, the midterm test and final test were used to evaluate students' achievement, while the satisfaction survey was employed to discover student's satisfaction in regard to the integrated teaching model and consequently the TOEIC test was applied with the engineering students. Raw data were computed through frequency, percentage, mean and standard deviation.

The first finding is associated with the first of objective with respect of entrepreneurs' needs and revealed the basic information identified by this investigation and interview the representatives of the 20 enterprises. They were

classified into the various types as follows: service network (60%), import-export firms (20%), spare part manufacture (10%), Business trader (5%) and enterprises (5%) respectively. It was also discovered that 85 per cent of engineering graduates or students are still working in these enterprises and only 15 per cent of them are not.

This study found that listening skills were in the highest demand in the workplace, followed by writing and reading skills. With respect to the necessity of English usage in the workplace, it was found that listening skills were considered the most necessary for communication, followed by speaking, reading and writing skills. Employers require staff to use English for general communication, such as greetings, and instructions and how they can be applied directly and efficiently to job tasks. These findings were strongly related to the work of (Malinee et. al. 1999; Meemak & Manthana, 2003; Ratanamon & Pataree, 2003; Leechai, 2008); Suwannee et. al. 2008; On-A-nong, 2008). Those graduates who could not understand and follow the instructions of administrators, managers or supervisors were not able to work effectively and efficiently. This could cause problems for both individuals and the companies that they work for. Therefore, it is necessary for these graduates to take English communication at work more seriously.

The second finding could be applied to the second objective, regarding the English proficiency of engineering students. The overall results of the 36 respondents' English proficiency test (TOEIC) was shown at 237.22 and their listening skill 133.88 and their reading skill 103.33 were ranked respectively. This indicated that English proficiency results of engineering students of Electronics and Telecommunication department was observed to be below standard level, of 600 and above as mentioned before. (Center for Professional Assessment (Thailand) 2012).

In terms of the English proficiency level of the participants on the TOEIC test, it was found that the total average score was 237.22; and that the average scores on the listening and reading parts were 138.88 and 103.33 respectively. This implies that the English proficiency level of engineering students was discovered to be at a low level. Based on

the findings of the Educational Testing Service (ETS), the English proficiency level of the Engineering students were shown to be very low and that these learners could not meet the needs of the entrepreneurs. This result was consistent with the findings of (Suwannee et. al 2008), P. (Kanchana et al 2000; Prakarn, 2011). While it is generally accepted that Thai engineers have a high level of professional competency, they also have a low level of English proficiency. The English language is a crucial medium for international trade and business. The results of the TOEIC or English proficiency test revealed that the English proficiency level of many university students and graduates in Thailand were still at a low level in comparison to international standards for speaking English for career purposes. Hence, it is necessary to rapidly develop the English proficiency level of Thai students, in response to the needs of entrepreneurs as well as the world market of the near future.

This following findings are directly associated with the third objective of this study. Regarding the empirical information from the entrepreneurs and the TOEIC results, listening was the first skill students needed to develop, followed by speaking, reading and writing skills respectively. The use of integrated teaching-learning combined communicative approach and content based, revealed that it was the most appropriate instruction technique used to develop the English proficiency of engineering students, it was applied in this research study and related to the study of (Malini, 1998; Thitiya, 2007; Charadsit, 2007; Chanlika, 2007; Choncharita, 2009; Kingkaew, 2010; Adisak 2011; Suchada, 2001; Kamonrat et al, 2010; Brinton, Snow and Wesche 1989; Willis 1996) Individual difference should be carefully considered. The demands of using English in communicating differs from each English background level. Learning demand from each student also resulted in different performance levels. Various climates and vocations directly require different skill demands. In this case, (Paitoon, 2000) a good lesson plan, appropriate contents, teaching media and evaluation process should be well conducted. This should also respond to the demands of the labor market and could motivate as well as encourage students to enjoy studying English subjects. Students understand the learning objectives, the contents and try their best to apply their knowledge they perceive in their daily lives as well as future careers. Hence, Communicative approach and Content based learning are considered to develop this instruction model for engineering students for the next section of study.

The fourth part of the findings revealed that after attending the integrated English instruction model, the level of students' achievement showed that no students were below the criterion of a 50 score, while 12 of them got 60-70, about 14 earned 70-80 and 4 of them got higher than 80 scores. This revealed that the achievement results of the engineering students were rather good or high. This finding was supported by the studies of (Snow and Wesche,

1989; Choncharita, 2009; Adisak, 2011; Narin, 2012). Particularly with foreign languages, teaching and learning English subjects is necessarily broken up into various activities. The activities and content should be well selected and implemented appropriately. Students need to comprehensively practice, understand and apply their new knowledge effectively. Students with vocational subjects can hardly use English in routine life or in the work place. Most of them lack confidence and have had few opportunities to apply it. Therefore, the integrated English instruction model is appropriate to use for engineering students and could respond to the entrepreneurs' needs as well as their English background.

The final part of the finding is in respect to students' satisfaction towards an instruction model between Communicative approach and Contented based learning for engineering students revealed that the overall satisfaction was found to be satisfied level. It could be ranked from the highest to the lowest as follows: Instructor ($x = 4.35$), instruction model ($x = 4.28$), classroom management ($x = 4.25$) and instruction management ($x = 4.24$) respectively.

This section of the findings was related to the studies of (Seneesrisan, 2007; Turner et al 2011; Chanchart, 2011) The Royal Thai Army Medical Department (2011) (Sukharom & Bamrungsuk, 2011) as generally students with low English proficiency, particularly vocational students need integrated English instruction methodologies management as they need more motivation and support to enhance their learning capabilities with natural understanding. This could promote the overall academic achievement at a good level. Most vocational students do not understand English language and they are not interested. Their English background isn't good. They come to class to pass the exam only. However, this attitude changes when they realize what they need to do and understand the necessity and the reason why they have to learn English language. When they know the criteria of evaluation and the feedback of each unit, they become satisfied and show better progress. They need to use English language in communication. They are happy with the instruction model that is provided for them with more activities to participate in. They know how to prepare themselves in and after class. Their attitude towards English language improves and the academic outcome is higher and they devote more effort to their studies.

This final section reveal that the overall TOEIC results of the engineering students at the Electronics and Telecommunication department on 5 October 2555 at the Center for Professional Assessment (Thailand) were discovered to be at 211.83 but when it was divided into 2 skills; listening was at 121.3 and reading at 90.5 This showed that English proficiency of the vocational students was below standard. This finding was directly supported by the studies of Kaur, Kuldip: (1995 P.Kanchanna and Oparnonamata, Prakaikaew) which also showed the relationship between the sixth objective that the level of satisfaction among students regarding the integrated English instruction model; communicative and content based learning was at a high level of satisfaction. With respect to teaching-learning management ($x = 4.24$), instructor aspect ($x = 4.35$), instruction model ($x = 4.28$), classroom with teaching media and devices ($x = 4.25$), which are related to the study of (Rachanee, 2007), (Kamonrat et al, 2010), (Sangchan, 2010) Army Medical Department (2010), (Sumalee, 2007). The students with low English proficiency need integrated instruction management to motivate and encourage them. (Tisana, 2001) revealed that students could not perform well when they were rarely involved in the instruction activity. This could support and promote learners to study English naturally and could lead to gaining higher English results when they feel satisfied with the instruction provided. Most vocational students did not understand and were also not interested in English subjects. Perhaps they had a weak English background and needed only a passing grade. However, this changed when they could work in groups to show their perception and realize the importance of English and receive their own feedback. This could encourage them to develop their English usage in a better manner. When students are satisfied with the instruction model, they pay more attention during the study, and participate in class comprehensively with a positive attitude. If the attitude toward English learning improves, they may study more effectively and as a result their level of English achievement will get higher.

Therefore, this study could draw the conclusion that good educational planning and the integrated English instruction model between the communicative approach and content based learning were important, based on the empirical data of the entrepreneurs and TOEIC scores. This revealed that effective management of the engineering students could lead to higher achievement results if students attend the English class regularly and study hard. The TOEIC test results of the engineering students were observed to be below standard, it could be said that the vocational students need more time to develop themselves to reach the level of international acceptance. A semester of experimental instruction is insufficient to bring them up to the level of standard criterion. However, the integrated

English instruction model could attract and motivate the engineering students to develop their English proficiency in a better manner. They may feel more satisfied and happy to study English with more involved activities provided and as a result, higher levels of satisfaction leading to a higher level of achievement.

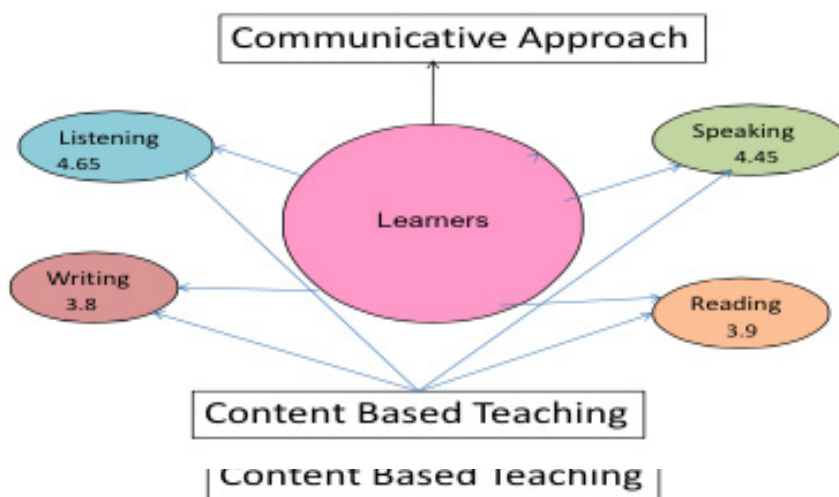


Figure 1 A Model to Develop the English Proficiency of Engineering Students

3. Research Implication

1. The findings of this study project could provide the model for other vocational subjects namely hospitality, tourism, home economics etc. to find an appropriate and effective method to develop their curriculums and subject areas

2. The instruction model could be applied in various subjects when the students have got similar problems or find it difficult to study.

3. English language for communication should be implemented into various vocational areas sincerely and honestly.

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